

# REMARKS

## I. NEW CLAIMS 13 TO 37

Claims 1 to 12 were English translations of the claims of a foreign patent application and were not originally prepared according to U.S. Patent Office Rules.

New claims 13 to 37 replace canceled claims 1 to 12. New claims 13 to 37 include the subject matter of canceled claims 1 to 12, but have been drafted in accordance with U.S. Patent Office Rules for claims.

New claims 13 to 37 include claims 13 to 21 for the novel magnesium-containing aluminosilicate glass according to the present invention. Claims 13 to 21 include the subject matter of canceled glass claims 1 to 7. However the subject matter presented in dependent claims 14 to 16 is new and is designed to claim preferred embodiments disclosed in the examples at the end of applicants' specification. Particularly the subject matter of claim 14 is found in the last five lines on page 4 of applicants' originally filed specification. The subject matter of claims 15 and 16 is found in the first full paragraph on page 5 of applicants' specification.

New independent glass claim 13 claims the same glass composition as in canceled claim 1, except that the upper limit for  $B_2O_3$  has been reduced to 9 % by weight. The basis for this change is found on the last line of the third full

paragraph on page 4 of applicants' originally filed specification.

New claims 22 to 28 claim a glass ceramic made from the novel magnesium-containing aluminosilicate glass according to the present invention. These glass ceramic claims contain subject matter from canceled claim 8, which originally was a multiple-dependent claim. Dependent glass ceramic claims 23 to 27 contain subject matter from the dependent claims for the glass starting material used to make the glass ceramic. Claim 28 includes new subject matter from the applicants' originally filed specification regarding the properties of the glass ceramic of the invention from page 1, last line; page 5, last five lines; the fourth paragraph on page 7, and the TEC from page 8.

New method claims 29 to 34 claim a method of making the novel glass ceramic of the present invention. They contain subject matter from canceled method of use (of the glass) claims 9 to 11 and also from the disclosure on pages 9 to 11 of the applicants' originally filed specification, which discloses the treatment temperatures and holding times used to make the glass ceramic.

New article claims 35 to 37 are based on canceled claim 12.

No new matter has been included in the new claims.

Since no "use" claims have been filed, withdrawal of the rejection of claims under 35 U.S.C. 101 is respectfully submitted. This rejection should not be applied to any of the new claims.

The objected-to wording in paragraph 3 of the Office Action has not been employed in the new claims. For the foregoing reasons it is respectfully submitted that none of the new claims should be objected to for including

informalities.

Furthermore the new claims 13 to 37 have been checked for antecedent basis errors and other wording that can lead to a rejection of the claims for indefiniteness.

## **II. REJECTION UNDER 35 U.S.C. 101**

The “use” claims 9 to 12 have been canceled, since this is not a permitted statutory class in U.S. Patent Practice. No “use” claims have been included in the new claims.

Thus it is respectfully submitted that none of new claims 13 to 37 should be rejected under 35 U.S.C. 101.

## **III. CLAIM OBJECTIONS**

None of the new claims 13 to 37 contain the hyphens mentioned in paragraph 3 of the Office Action. All claims end with a period. The claims are in a standard form that is conventionally used in U.S. Patent Practice with well established transitional phrases, such as “comprising”. Wording such as “characterized in that” is not used in the claims.

Thus the form of new claims 13 to 37 should be acceptable.

#### IV. REJECTION BASED ON TAGUCHI

Claims 1 to 8 were rejected as anticipated under 35 U.S.C. 102 (b) by U.S. Patent 5,726,108 (referred to below as “Taguchi” or “US ‘108”) or alternatively as obvious under 35 U.S.C. 103 (a) over U.S. Patent 5,726,108 (“Taguchi” -- “US ‘108”).

The glass compositions claimed in applicants’ claim 1 had respective concentration ranges for  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{MgO}$ ,  $\text{B}_2\text{O}_3$ , and  $\text{P}_2\text{O}_5$  that overlapped corresponding concentration ranges for those ingredients in the magnesium-containing aluminosilicate glass disclosed and claimed by Taguchi (Claim 1 of US ‘108). Various embodiments of Taguchi also contained  $\text{As}_2\text{O}_3$  and  $\text{Nb}_2\text{O}_3$  in amounts within the concentration ranges recited in claim 1. Thus there is some basis for an obviousness rejection of the canceled claim 1 in Taguchi (see MPEP 2144.05).

However claim 1 has been canceled. New claim 13 claims a glass composition that is patentably distinguishable from the glass compositions disclosed in Taguchi -- US ‘108. New claim 13 should not be rejected as anticipated by or obvious over Taguchi -- US ‘108.

More specifically, the upper limit for  $\text{B}_2\text{O}_3$  in the glass claimed in new claim 13 is 9 % by weight. Thus the concentration range for  $\text{B}_2\text{O}_3$  in the glass composition recited in new claim 13 **no longer overlaps or touches** the concentration range for  $\text{B}_2\text{O}_3$  in the glass disclosed in Taguchi, US ‘108, which is

10 to 25 % by weight (claim 1, column 4, especially line 55).

According to M.P.E.P. 2131.03 a prior art reference, which teaches a composition with respective concentration ranges that are within, overlapping, or touching the corresponding ranges of a claimed composition anticipates it, as long as the prior art ranges disclose the claimed ranges with sufficient specificity.

In the present case Taguchi does **not** anticipate claim 13 because Taguchi teaches a glass composition containing from 10 to 25 % by weight  $B_2O_3$ , whereas applicants claim a glass composition containing from 0 to 9 % by weight  $B_2O_3$ . Taguchi does not teach a glass composition in which the concentration range for  $B_2O_3$ , which is a required ingredient in Taguchi, is within, overlaps, or touches the  $B_2O_3$  concentration range in the new claim 13.

The 1 % difference between the upper limit for  $B_2O_3$  of 9 % by weight in applicants' glass composition and the lower limit for the amounts of  $B_2O_3$  used in the compositions of Taguchi is very significant, because the lower amounts of  $B_2O_3$  prevent formation of mullite and aluminum borate during ceramicization. Mullite and aluminum borate are predominant crystalline phases in the glass ceramic composition of Taguchi. See the abstract; column 1, lines 15 to 20; column 2, lines 40 to 45; and column 3, lines 55 to 64; of US '108. In contrast, the glass composition of claim 13 produces a glass ceramic with spinel and sapphirine as the predominant crystal phases or primary crystallites when ceramicized because of the compositional differences.

Furthermore it should be noted that all claims including the independent glass ceramic composition and method claims contain the limitations of claim 13.

The glass of claim 13 is the starting material for making the glass ceramic, which has the same elemental composition as the glass of claim 13.

In addition, with respect to dependent claim 14 US '108 does not disclose or suggest a ceramicizable glass that contains yttrium.

Furthermore with respect to method-of-making-the-glass-ceramic claim 29 US '108 discloses that the primary and predominant crystalline phase formed in the glass ceramic is mullite (see tables 1 and 2 and locations cited above including the abstract and field of the invention in US '108). In contrast step b of claim 29 states that the primary crystalline phase includes spinel and sapphirine.

Thus it is respectfully submitted that claims 13 to 37 should **not** be rejected as anticipated under 35 U.S.C. 102 (b) by the disclosures in Taguchi, et al, in accordance with M.P.E.P. 2131.03 because of the reduced upper limit for  $B_2O_3$ .

Furthermore because of the above differences, it is respectfully submitted that claims 13 to 37 should not be rejected as obvious under 35 U.S.C. 103 (a) over Taguchi, et al.

## **V. PANNHORST, US PATENT 6,376,402**

Paragraph 7 of the Office Action cited US Patent 6,376,402 (US '402), but no rejection was based on the disclosures in this patent. This patent is of course an English language equivalent for JP 2000/327365, which was filed with an Information Disclosure Statement.

An anticipation rejection of claim 13 under 35 U.S.C. 102 (b) or an obviousness rejection of claim 13 under 35 U.S.C. 103 (a) cannot be based on the glass compositions of US '402 or JP '365 because the broadest concentration range for  $\text{Al}_2\text{O}_3$  disclosed in US '402 is 10 to 17 % by weight (see abstract, column 4, lines 30 to 40, and claim 1 of US '402), which is **not** close to, touching or overlapping the concentration range of  $\text{Al}_2\text{O}_3$  in the new claim 13, namely 25 to 40 % by weight.

Furthermore it should be noted that all claims including the independent glass ceramic composition and method claims contain the limitations of claim 13. The glass of claim 13 is the starting material for making the glass ceramic, which has the same elemental composition as the glass of claim 13.

It is respectfully submitted that **none** of the new claims 13 to 37 should be rejected as anticipated under 35 U.S.C. 102 (b) by or obvious under 35 U.S.C. 103 (a) over US Patent 6,376,402 (US '402).

It is noted that Japanese reference 3-4507 has not been considered as a reference because the IDS does not include a Statement of Relevancy. However the subject reference is mentioned and discussed in the specification of the application, and in the IDS the page and line where the reference appears has been noted. According to the MPEP, under such circumstances, the reference is to be considered, even without a specific Statement of Relevancy. It is requested that the Japanese reference now be considered.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects, to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549 4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

**/ Michael J. Striker /**

Michael J. Striker,  
Attorney for the Applicants  
Reg. No. 27,233